

Name: \_\_\_\_\_

### pa1106: Factoring with box when $a = \text{prime}$ (v4)

#### Example

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	-6
2x	$2x^2$	$-12x$
3	3x	-18

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

#### Question 1

Use the box to factor  $7x^2 + 47x + 30$ .

*	x	6
7x	$7x^2$	$42x$
5	5x	30

ANSWER:  $(7x + 5)(x + 6)$

### Question 2

Use the box to factor  $3x^2 - 14x - 49$ .

*	x	-7
3x	$3x^2$	-21x
7	7x	-49

ANSWER:  $(3x + 7)(x - 7)$

### Question 3

Use the box to factor  $5x^2 - 48x + 27$ .

*	x	-9
5x	$5x^2$	-45x
-3	-3x	27

ANSWER:  $(5x - 3)(x - 9)$